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DOI:

[10.1136/jramc-2018-000993](https://doi.org/10.1136/jramc-2018-000993)

Document Version

Peer reviewed version

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Citation for published version (APA):

Bricknell, M., Finn, A., & Palmer, J. (2019). For debate: Health service support planning for large-scale defensive land operations (part 1). *Journal of the Royal Army Medical Corps*, 165(3), 173-175.
<https://doi.org/10.1136/jramc-2018-000993>

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FOR DEBATE: HEALTH SERVICE SUPPORT PLANNING FOR LARGE SCALE DEFENSIVE LAND OPERATIONS (PART 1) – PRE-PRINT

Published as: For debate: health service support planning for large-scale defensive land operations (part 1). Martin Bricknell, A Finn, J Palmer. Journal of the Royal Army Medical Corps Jun 2019, 165 (3) 173-175; DOI: 10.1136/jramc-2018-000993 PMID: 30127068

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Abstract

This is the first of two articles that considers the medical planning implications of large scale defensive military operations. This paper considers the military context and planning factors that may require a medical plan that is different from that seen in recent counterinsurgency operations. The scale and complexity of the challenge is likely to require a greater level of decentralisation and a more sophisticated approach to medical planning at the strategic and operational levels.

Abstract Word Count 74

Word Count 2702 References 16

Key Words Public Health, Trauma Management, Health Services Administration and Management

Introduction

The Operational Patient Care Pathway (1, OPCP) was designed as a clinically orientated conceptual model for the functional capabilities that provide clinical care to operational patients from point of injury through to completion of Role 4 care. This was based on the clinical innovations in the care of patients from military operations

in Iraq and Afghanistan (2) and was converted into organisational structures through creation of the graphic that describes HSS to the joint operational area (3). To date, the OPCP has been applied successfully in diverse deliberate operations (Op GRITROCK – UK contribution to Ebola response in Sierra Leone and Op TRENTON – UK contribution to UN operations in South Sudan) and has underpinned health service support (HSS) planning for small-and medium- scale contingency (4).

Inter-state conflict has returned as a threat to UK national security (5). The Modernising Defence Programme is focused on regenerating and refining UK's capability to conduct wargfighting at scale (WF@S). Therefore it is time for us to consider how the OPCP is to be applied to large-scale, high intensity wargfighting operations against a peer adversary, whilst retaining the adaptability to accommodate operations across the spectrum of conflict. During the Cold War, the UK casualty estimates for a possible European conflict against the Warsaw Pact were 32,000 surgical casualties, 7500 combat stress casualties, 15000 chemical casualties over an eight day period, with 4,000 casualties per day arriving at the UK. This paper reviews some of the approaches to HSS planning to meet the Cold War demand and considers how these might be relevant once again.

The Military Context

The distinction between peace and war has become less distinct with confrontation between states and with non-state actors becoming more prevalent. Both parties are likely to use diplomatic, information and economic activities to achieve security objectives alongside the threat or actual use of military capability. The objectives of confrontation are more likely to be based on influence behaviours of the target rather than actual control of new territory. Within this strategic context, the UK will need to be capable of applying, and defending against, Integrated Action at all levels of military operations. It is highly likely that adversaries will use disinformation, denial of communication and the electromagnetic spectrum and internal insurrection as means to wage confrontation alongside any conventional use of military forces; moreover it is increasingly possible that CBRN (chemical, biological, radiological or nuclear) and/or novel weapon systems will be employed for operational advantage. At the tactical level, the UK will need to be capable of conducting dispersed, high-tempo operations in complex terrain; in particular rapid transition phases, massing of joint fires against fleeting targets of opportunity and generating uncertainty by operating outside of doctrinal norms will all be critical to success against a peer adversary. Within this, the urban environment is likely to be a major battlefield, with state adversaries able to deny movement through the use of anti-access and area denial weapons (including mines and novel ballistic weapons). It is also possible that there will be less protection of civilians and health personnel as a result of adversaries operating without the constraints of the Laws of Armed Conflict or International Humanitarian Law (6). All of these factors require HSS for confrontation and conflict to adapt from our recent experiences of counter-insurgency operations and to refresh our approach to the OPCP (7).

Planning Factors

Scheme of manoeuvre. Medical capability in the Cold War era was designed around a very simple and highly prescriptive scheme of manoeuvre (often referred to as the “linear” patient pathway). This was the plan for the very specific scenario of a high intensity, short duration, corps level battle against a numerically superior enemy producing a very high volume of casualties. The ground over which this was to be fought was well known. This approach provided a very robust, high capacity/low capability healthcare system that could continue to operate despite limited communications and poor situational awareness available at the time. Looking forward, this prescriptive Cold War approach retains relevance as a reversionary mode, but it fails to provide the agility of HSS capability required to enable the tactical activity that is critical to success against a peer adversary. The modern approach to HSS to WF@S will require a more nuanced approach, based on inherently agile capability building blocks that can transition rapidly and seamlessly between tactical actions.

Casualty Estimation and the Medical Planning Guideline. The Casualty Estimate is the most important planning factor for HSS. The principles around casualty estimation have been covered in a previous paper in this journal (8). It will be important to agree the methodology for casualty estimation with the operational planning community because the potential number of casualties in these scenarios will be substantially more than those experienced during the recent counter-insurgency campaigns. The data used during the Cold War based on evidence from the Second World War may be an appropriate reference point, however there will also be data from recent battles from conflicts in Ukraine, Iraq and Syria that could provide a more contemporary analysis. It will also be necessary to consider civilian casualties within the casualty estimation process as it will be necessary to consider how their needs for HSS will be met. The 10-1-2(2)+2 Medical Planning Guideline is the guideline for the location of medical capabilities by time in the OPCP. It is possible that this will not be achievable in the threat environment and medevac distances of high intensity operations. Medical planners will need to be adept at articulating relative clinical risk to better Command decision-making; whilst clinical personnel may need to adapt clinical practise to sustain patients who cannot be moved within this guideline. This is the essence of the concepts behind prolonged field and hospital care.

Medical Evacuation. During the Cold War all movement between point of injury and the forward hospital complex was conducted by ground based ambulances, with onward medevac to the rear hospital complex being conducted by rail or air. Overall this was primarily a ‘Ground’ medevac system. Medical evacuation in counter-insurgency operations has been discussed in a previous paper in this Journal (9). Nearly all casualties were collected by Forward Aeromedical Evacuation (AE) from/near the point of injury, with ground medevac relegated to a contingency plan where aeromedical evacuation was not available; this was primarily an integrated ‘Air’ medevac system. In both these scenarios, the severity of casualties dictated the

relative speed of movement through a single patient pathway. Looking forward, the balance in demand and supply of Forward AE is likely to be complex and highly dynamic. In particular, in WF@S, the use of limited Forward AE capacity may be apportioned by tactical priority rather than purely on the basis of clinical need. Hence, a large-scale operation is likely to involve a complex and dynamic blend of concurrent “*Air **and** Ground*” medevac that varies in time and space. The type/severity/volume of casualties will determine the route of OPCR for each patient across the network of medical facilities in a theatre of operations. This is fundamentally different from the Cold War and will be extremely challenging for the Patient Evacuation Control Centre who will require high levels of situational awareness and access to patient information to inform casualty regulation. The utility of unprotected battlefield ambulances is likely to be extremely limited and the system will be a reliant on protected ambulances, capable of supporting the full spectrum of casualties over long distances. Moreover, in high threat areas, medevac may have to be a tactical combat task in order to ensure sufficient protection for the casualties during transit. To generate the capacity required, it will be necessary to consider how to co-opt civilian ambulances into the military medical evacuation system and possibly to rejuvenate relationships with the UK Voluntary Aid Societies that proved to be an effective augmentation to the formal military medical system in the First and Second World Wars (10). It may also be necessary to adapt civilian mass transit systems for the movement of high volumes of casualties including coaches, railway stock, wide-body aircraft and passenger liners. UK casualties may have to transit through several countries as part of their evacuation journey and this is likely to require mechanisms for co-ordination with the medical services of their host nations.

Hospitalisation. Since the end of the Cold War, UK Field Hospitals have evolved into a generic, scalable, low capacity/high capability configuration, specifically designed to support the requirements of small- and medium- scale contingent military operations. Moreover, to date, application of the OPCR has included an option of STRATEVAC direct from “Forward” deployed hospital care. In large-scale operations, it is likely that patients will need to be cleared from the forward hospitals in the theatre of operations because STRATEVAC will have to be conducted further away from battlefield because of the threat to military airfields. It may be necessary to separately designate the functions of military hospitals as tactical ‘Field Hospitals’ and relatively static Force Support Hospitals with higher capacity and specialist clinical capability, similar to the medical organisation for the world wars and the Cold War (11). This designation balances mobility, capacity and clinical capability for our deployable hospital structures.

Coalition and Host Nation Medical Planning. It will be inevitable that HSS in a large-scale military operation will be part of a coalition operation, probably within a formal Alliance such as NATO. It is probable that the military forces of the host nation will be part of the coalition (12). The host nation civilian medical system will be actively involved in medical planning for civilian casualties and may also have a role in the care of military casualties. International bodies non-government organisations may also contribute to the medical effort (13). Therefore it will be necessary to plan

at theatre level with all HSS partners and allocate staff to the liaison and co-ordination functions necessary to achieve the best level of interoperability and efficiency in the use of medical resources within the Theatre. The same will apply for the reception and distribution of casualties within the UK and this will follow guidelines set out in the UK emergency planning, resilience and response frameworks (14).

Triage versus MASCAL. It was recognised during the Cold War that, in the event of very large numbers of casualties, triage prioritisation would have to shift from attending to the sickest patients first to attending to those with greatest capacity to benefit first. The decision to adjust triage prioritisation was termed 'Mass Casualty or MASCAL' and changed the coding system from a 'P' system to a 'T' system and introduced an additional triage category 'T4 – expectant'. This nuance has been lost and the 'T' nomenclature has become the universally adopted triage system by clinical necessity and 'T4' is used *incorrectly* to cover the deceased. Moreover, since the end of the Cold War, in NATO Doctrine 'MASCAL' has become synonymous with a 'medical major incident' (which requires mobilisation of "extra-ordinary resources", but does not automatically necessitate use of the T4 expectant category (15)). It may be necessary to formally re-introduce the former MASCAL concept and revise the method of communication in order to re-introduce the procedural mechanisms that explicitly change clinical practice to husband medical resources to focus on benefitting the maximum number of casualties. Perhaps this might be a '**M**' system denoting MASCAL.

Medical Reserve. Since the Cold War, the medical plan has been specifically tailored to provide defined coverage for an area of military operations. The lack of surge capacity has been mitigated by the introduction of 'medical rules of eligibility' to control access to the military HSS system and the assumption that the pace of military operations could be adjusted to the capacity of the medical system. In high tempo, high intensity peer-to-peer conflict such a tactical and operational constraint will be unacceptable. Therefore it will be necessary to explicitly define uncommitted strategic, operational and tactical medical reserves that can be assigned to respond to unexpected casualty flows. This will be most important at a tactical level where fluctuations in demand will have the greatest effect.

Mobilisation. The deployed component of the Defence Medical Services are designed to be a combination of Regular and Reserve personnel. This acknowledges the relatively low level of clinical workload from trauma during peacetime but the substantial increase in demand during military operations. The Reserve component is designed to provide this augmentation. Additionally, it may be necessary to mobilise the Regular Reserve (the group of Service personnel with residual liability for mobilisation after early retirement from Regular Service). Whilst the total number of Reserves employed by the NHS is a very small proportion of the total workforce, there will be an impact on NHS clinical performance if large numbers are mobilised. Therefore it will be necessary to establish co-ordination of not just medical reserves through the NHS system but also to ensure that the correct

balance of choice is taken over the use of the national medical workforce in support of military operations alongside routine clinical services and any residual capacity needed to respond to military threats to the national homeland. This was exactly the balance that occurred during the World Wars with the establishment of a strategic medical manpower planning group, the Central Medical War Committee (16).

‘Role 4’. The UK NHS will be the receiving clinical capability for UK military casualties returning from overseas. This system was highly effective in maintaining clinical care through Queen Elizabeth Hospital in Birmingham during the relatively low demand of Op HERRICK. With the UK casualty estimates of high intensity warfighting operations against a peer adversary, it will be necessary to distribute military casualties to a wider group of hospitals across the NHS for higher volumes of casualties including establishing a footprint of military support cells for military patients within these hospitals. This will be co-ordinated using NHS Emergency Planning, Resilience and Response (EPRR) system. This will be very similar to the mechanisms for civil-military co-ordination during World War 1 and 2.

Medical C2. Over the past 20 years the decentralised medical C2 model used in the Cold War evolved into a highly centralised model in which medevac was controlled directly by a 2* headquarters and difficult clinical decisions were referred to a Deployed Medical Director. This centralisation was entirely appropriate given the tactical context and was a key factor in the improvements in patient care. However the volume, complexity and tempo of decisions that will be an enduring character of a high intensity operation will force us to revert to a decentralised medical C2 model. However, in doing so, this does not mean simply reverting to a Cold War model as there are three fundamental differences. Firstly, the agility in HSS capability required to support a future large-scale conflict will in itself drive a paradigm shift in medical C2 that will be particularly pronounced at battlegroup level. For example, during the Cold War the fixed construct meant that battlegroup medical planning was restricted to “**where?**” to place the UAP/Med Sect; now with Pre-Hospital Treatment Teams (PHTTs) designed to adopt multiple configurations, battlegroup medical planners must consider “**how and where?**” to place multiple PHTTs. The second area of fundamental change is in the clearance of casualties from the rear of a battlegroup. In the Cold War, the Medical Regiment both regulated and controlled the movement of ambulances along secured lines of communication. Now, in an era when lines of communication are contested, Medical Regiments will continue to provide regulatory advice, but the movement of ambulances must be controlled by the battlespace owner. One cannot happen without the other, therefore medical operations teams will need to be fully integrated into battlespace owning headquarters. The third difference will be the requirement for coalition co-ordination at the theatre level including the need to understand the impact of military operations on the civilian health system. This will require substantially greater numbers of medical liaison cells including across the NHS.

Conclusion

This paper has considered how we need to consider how lessons from medical planning in the Cold War need to be combined with modern concepts for medical support planning based on lessons from recent counterinsurgency operations. The second paper in this series will unify these ideas into a Theatre Level HSS concept and re-introduce the ideas of 4 phases in the medical evacuation of a casualty: collection, hospitalisation, evacuation and reception.

Acknowledgements. The authors wish to acknowledge additional contributions to this paper from Surgeon Commodore Millar, Colonel Johnson, Colonel McKnee, Lieutenant Colonel Leighton and Lieutenant Colonel Jackson.

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